

REMARKS

In an Office Action dated November 7, 2000, the Examiner rejected claims 1-12 under 35 U.S.C. § 102(e) as anticipated by *Higdon et al.* ("*Higdon*") and claims 13-17 under 35 U.S.C. § 103 as obvious in view of *Higdon* and *Upchurch*. In response, Applicants submit new claims and request reconsideration.

I. THE REJECTION OF CLAIMS 1-12 AS ANTICIPATED BY HIGDON

Claims 1-12 were rejected under 35 U.S.C. § 102(e) as anticipated by *Higdon*. In the office action, the Examiner noted the disclosure in *Higdon* "of a '...stream switching system...' for a chromatograph including a plurality of solenoid valves 98, a sheet heater (column 4, lines 57+, and an insulated hosing (sic) (Figure 3B, for example)." Office Action of 11/7/00, p. 2.

Applicants respectfully submit that *Higdon* does not anticipate claim 1 because *Higdon* does not show every feature of the invention recited in claim 1. Claim 1, both as originally submitted and as amended, requires more than just a stream switching system, a plurality of solenoid valves, and a sheet heater. In particular, claim 1 requires a stream switching housing with a common stream channel, and tubing connected to an output port of the common stream channel, with at least part of the tubing being a pre-heat coil. Claim 9 requires a common stream channel portion, with each of the input ports and output ports being actuatable between an open position and a closed position. These combinations of elements are wholly lacking from *Higdon*.

To establish the failure of *Higdon* to show the features of claim 1, it is educational to refer to the preferred embodiment disclosed in the specification. In particular, it is educational to refer to Figure 7 of the application and accompanying text. However, at the same time, Applicants caution that Figure 7 is only a preferred embodiment of the invention, that claims may be legally

drafted broader than the preferred embodiment, and that the comments herein are intended merely to educate the Examiner, and not to create estoppel.

Referring to Figure 7, a common stream channel portion is shown. The common stream channel portion may be identified because of the multiple stream paths which lead into it and then share its length. Tubing or the like is connected to the output ports, with the tubing functioning, at least in part, as a pre-heat coil. Each of the input ports and output ports may be in an open or in a closed position. None of this is shown by *Higdon*.

II. THE REJECTION OF CLAIMS 13-17 AS OBVIOUS IN VIEW OF HIGDON AND UPCHURCH

Claims 13-17 were rejected under 35 U.S.C. § 103 as obvious in view of *Higdon* and *Upchurch*. In particular, the Examiner stated that “Higdon discloses the claimed invention except for the recitation of a ‘filter’ as taught by Upchurch (Figure 1). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the chromatograph system of Higdon et al to include a ‘cartridge filter’ as taught by Upchurch in order to provide more ‘pure’ fluid to be tested and/or processed.” OA of 11/7/00, p. 3.

Applicants respectfully submit that the Examiner is mistaken. *Upchurch* teaches a check valve for liquid chromatography pumps. Included in this check valve is a clean filter 226 (col. 4, l 28). However, this alone does not render the invention of claim 13 unpatentable.

Applicants readily admit that filters are old in the art, and the mere inclusion of a filter in a gas chromatograph system is not what makes the claim patentable. Claim 13 recites not simply a filter, but one or more filters proximate the sample point and between the sample point location and the stream switching portion. Claim 14 specifies that the filter(s) are within 10 feet of the sample point. Claim 15 requires that the filter(s) be within 3 feet of the sample point. Claims 16 and 17 specify the location of a pressure regulation device with respect to the filter. *Upchurch* fails

to teach or suggest a location for the filter. Even more damaging to the Examiner's rejection, *Upchurch* fails to teach or suggest that the filter should be proximate the sample point, should be within 10 feet of the sample point, or should be within 3 feet of the sample point. Applicants respectfully submit that the Examiner has failed to make a *prima facie* case of obviousness and therefore requests allowance of the claims.

III. NEW CLAIMS

Applicants submit new claims 18-27. Each of these claims is patentable generally speaking not only for the reasons provided above, but also for the additional reasons provided below.

Claim 18 recites that at least part of the tubing in claim 1 is a flow restrictor. By restricting the flow in the tubing, the flow velocity is reduced. This helps increase the residence time of the gas sample in the pre-heat coil, and therefore help consistent heating of the gas sample to be achieved.

Claims 19 and 20 recite that there are more input ports than output ports. This is one advantageous feature that can be achieved with a common stream channel as recited in claim 1. For example, through claim 1, claims 19 and 20 also recite that the pre-heat tubing is connected to at least one of the output ports. By having fewer output ports than input ports, the amount of necessary pre-heat tubing connected to the output ports is reduced with a commensurate reduction in cost. In addition, because gas samples from multiple input streams travel through the same tubing, there is therefore less variation among how and for how long the sample are heated. This results in the heating of the gas samples is more consistent.

Claims 21 and 22 recite a sample shut off switch connected to a downstream end of the tubing, a feature wholly absent from the applied references. Claims 23 requires that this sample shut off switch include a bleed port. The arrangement recited in these claims is desirable because

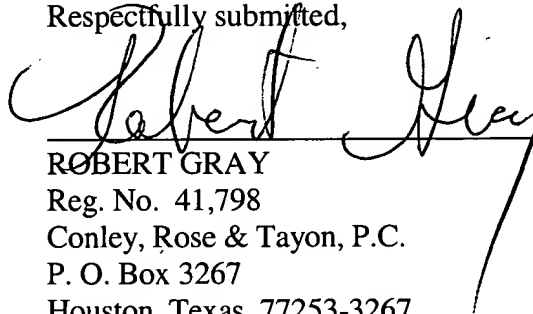
by placing the pre-heat coil upstream of the sample shut off switch, rather than downstream of it, there is less volume of gas to bleed off (the gas bled off is that downstream of the sample shut off switch). In the case, *e.g.*, of a calibration blend (*i.e.* a gas mixture used to calibrate the gas chromatograph) in the stream switching system, noticeable cost savings result. Even where a valuable gas mixture is not in the stream switching system, the pre-heat coil may be quite long and it very well might take far too long to bleed off, impeding efficiency. In addition, by trapping the gas in the pre-heat coil, the gas sample is warmed more effectively resulting in improved measurement accuracy for the gas chromatograph.

Claims 25 – 27 are patentable generally for the reasons provided above.

IV. CONCLUSION

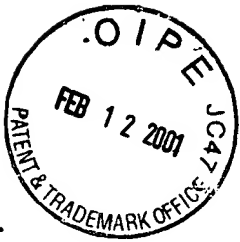
Applicants respectfully request allowance of all the claims. If the Examiner has any questions or wishes to expedite the prosecution of the case in any respect, he is invited to call the undersigned.

Respectfully submitted,



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means for selecting which of a plurality of gas samples enter said housing;

means for heating said gas samples after said gas samples have entered said housing.

--26. A stream switching system, comprising:

a housing forming an interior flow path for ~~1~~ gas samples, said flow path connecting to the exterior of said housing via a first number of input ports and a second number of output ports, wherein said number of input ports is greater than said number of output ports; and

and piping connected to at least one of said output ports, said piping heating said gas samples to ~~about~~ ^a predetermined temperature

--27. The stream switching system of claim 26, wherein said housing further forms a sample shut off channel with an external bleed port, ^{and further wherein} said piping ~~being~~ ^{is} upstream of said sample shut off channel.--